

The Spectrum of the γ -Rays From the
 $\text{Cl}^{35}(n,\gamma)\text{Cl}^{36}$ Reaction

S/048/60/024/007/016/032/xx
B019/B056

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second column the energies, and in the third the intensities of the lines are given. On the basis of the data given in Table 1, the γ -transition scheme shown in Fig. 3 was set up, for which data from an investigation of the (d,p) reaction carried out by Paris et al. (Ref. 4) were used. Special interest was paid to the neighboring 1.957 Mev and 1.949 Mev levels, and this part of the γ -transition scheme is discussed more in detail on the basis of the section of the scheme shown in Fig. 4. In the diagram of Fig. 5 the position of the two levels in the spectrum is shown. In a detailed discussion, three variants of transitions are discussed, but it is finally found that the data at present available permit no opinion to be expressed on the correctness of one or the other variant. There are 5 figures, 1 table, and 11 references; 4 Soviet, 6 US, and 1 Norway.

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8/048/62/026/008/003/028
B163/B104

AUTHORS: Groshev, L. V., Demidov, A. M., Lutsenko, V. N., and Pelekhov, V. I.

TITLE: Spectra of γ -rays and internal conversion electrons from the reaction $Cd^{113}(n\gamma) Cd^{114}$

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya, v. 26, no. 8, 1962, 979 - 992

TEXT: The γ -spectra in the energy range from 0.4 to 9.5 Mev were measured in a magnetic Compton spectrometer giving a resolution of 0.3% for energies above 2 Mev and of 0.6% at $E_{\gamma} = 1$ Mev, described earlier by Groshev et al. (Izv. AN SSSR. Ser. fiz., 24, 791 (1960)). The spectrum of internal conversion electrons in the energy range from 20 kev to 3 Mev was measured in a magnetic beta spectrometer with a resolution of 0.6% at $E_e > 300$ kev and of 1% at lower electron energies, described earlier by Pelékhov and Malov (Izv. AN SSSR. Ser. fiz. 25, 1069 (1961)). The energy levels of Cd^{114} are of interest for investigating the lower levels in even-even nuclei. To measure the γ -spectrum, a metallic cadmium target consisting of the natural

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mixture of isotopes was bombarded with thermal neutrons. In the γ spectrum 132 lines were resolved, containing 37% of the total energy released by the neutron capture. To measure the internal conversion spectrum a cadmium oxide target of 0.8 mg/cm² thickness, enriched to 85% Cd¹¹³ on an aluminum backing foil was used. This spectrum contained 36 lines up to energies of 1.7 Mev. The energies, relative intensities, and internal conversion coefficients of the lines were tabulated. From these data, a level scheme was constructed assuming that the relatively intense lines with energies above 5 Mev correspond to transitions from the initial state formed by the neutron capture to the lower nuclear levels. The binding energy of the last neutron in Cd¹¹⁴ was found to be 9041 ± 3 kev. The characteristics of lowest levels at 558, 1134, 1209, 1283, 1306, 1364, 1732, 1841, 1958 kev above the ground state are discussed. The lowest of these levels are well known from earlier Coulomb excitation, β decay and (dp) reaction experiments. The 1306 kev conversion line is thought to correspond to a $0^+ - 0^+$ transition from the 1306 kev level to the ground state and the 1305 kev γ line is thought to belong to another level. For the levels at 1134 and 1209 kev the ratios of reduced branching probabilities are consistent with calculations for vibration models. It is concluded that the 1730, 1841, and Card 2/3.

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1958 kev levels have the characteristics 4^+ , 1^+ and 3^- respectively. The squared transition matrix elements for the first 30 transitions from the initial state to the lower levels are given in a table. For the first 20 transitions they are low, but for the next 10 transitions to excitation levels above 3 Mev the squared matrix elements are much larger. There are 5 figures and 6 tables.

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40867

S/048/62/026/009/001/011
B125/B186

212500

AUTHORS: Groshev, L. V., Demidov, A. M., Ivanov, V. A., Lutsenko, V.N.,
and Pelekhov, V. I.

TITLE: Spectra of γ -rays and internal conversion electrons arising
in the ($n\gamma$)-reaction on gadolinium isotopes

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya,
v. 26, no. 9, 1962, 1119-1133

TEXT: The spectra of the γ -rays that arise when thermal neutrons are
captured by Gd¹⁵⁵ (capture cross section 61000 ± 5000 barn) and Gd¹⁵⁷
(capture cross section 240000 ± 12000 barn) were taken in the energy
range 0.4 to 9 Mev. The inner conversion electron spectra were taken at
electron energies of 20 kev to 3. Mev by magnetic spectrometers. The
Gd₂O₃ specimens were enriched in Gd¹⁵⁵ and Gd¹⁵⁷. The γ spectra
measurements and the apparatus have been described by Groshev L. V. et al.
(Izv. AN SSSR, Ser. fiz., 791 (1960)). The internal conversion
electron spectra were determined using the same enriched gadolinium

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isotopes as in the measurements of γ -radiation spectra. The internal conversion electron lines were separated from these spectra. Their intensity, the K-shell conversion coefficient α_K , the ratio α_K/α_L and the type of the transition are given. In measuring most of the levels of the Gd¹⁵⁶ γ -transition scheme it has been assumed that the γ -lines with $E > (B_{II} - 3)$ Mev correspond to an initial state. This initial state arises when the neutron is captured onto lower levels of the nucleus. The levels within the energy gap of 2.1 Mev (for Gd¹⁵⁶) and 1.7 Mev (for Gd¹⁵⁸) are described separately. Most of the levels above 1621 kev were determined from the transitions out of the initial state. The Gd¹⁵⁸ γ -transition scheme was established on the same basic considerations as the Gd¹⁵⁶ γ -transition scheme. The levels with 1188, 1268, 1405, 1521, 1373, 1454 kev are described separately. The lines contained in the spectra of internal conversion electrons with 496, 669, 687, 700 and 707 kev for Gd¹⁵⁶ and with 438, 457, 702 and 746 kev

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Spectra of γ rays and internal ...

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for Gd¹⁵⁸ could not be detected in the γ -ray spectra. The transitions with 526, 613 and 674 kev in Gd¹⁵⁶ and 538 kev in Gd¹⁵⁸ show increased conversion. There are 5 figures and 6 tables.

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X

GROZDEV, I.V.; BUDENOV, A.V.; IVANOV, V.A.; LITVINENKO, V.V.;
VOLKOV, V.I.

Energy levels of Gd¹⁵⁶ and Gd¹⁵⁸. Sov. AN SSSR 14:1 no.1:59-
(GUD 167) (KED 14:11)

I. Predstavlenie akademikom I.A. Artsirovichem.
(Gadolinium--Isotopes)
(Quantum theory)

GROSHEV, L.V.; DEMIDOV, A.M.; LUTSENKO, V.N.; PELEKHOV, V.I.

Spectra of γ -rays and internal conversion electrons from the
reaction Cd¹¹³(n γ)Cd¹¹⁴. Izv. AN SSSR. Ser. fiz. 26 no.8:
979-992 Ag '62. (MIRA 15:11)
(Gamma-ray spectrometry) (Cadmium---Isotopes)
(Electrons)

GROSHEV, L.V.; DEMIDOV, A.M.; IVANOV, V.A.; LUTSENKO, V.N.
PELEKHOV, V.I.

Spectra of gamma rays and internal conversion electrons emitted
in ($n\gamma$) reactions on gadolinium isotopes. Izv. AN SSSR. Ser. fiz.
26 no. 9:1119-1133 S '62. (MIRA 15:9)
(Internal conversion (Nuclear physics))
(Gamma rays—Spectra) (Gadolinium—Isotopes)

S/903/62/000/000/041/044
B102/B234

AUTHORS: Groshev, L. V., Demidov, A. M., Lutsenko, V. N., Pelekhov, V. I.

TITLE: Radiative properties of the Cd¹¹⁴ lower levels

SOURCE: Yadernyye reaktsii pri malykh i srednikh energiyakh; trudy Vtoroy Vsesoyuznoy konferentsii, iyul' 1960 g. Ed. by A. S. Davydov and others. Moscow, Izd-vo AN SSSR, 1962, 548-550

TEXT: The authors investigated the Cd¹¹³(n, γ)Cd¹¹⁴ reaction induced by thermal neutrons and measured the γ -ray spectra in the range 0.3-9.5 Mev as well as the conversion electron spectra in the range 0.3-2 Mev. The measurements were made with a new type of Compton magnetic spectrometer with 0.3% resolution at $h\nu > 2$ Mev and with a special conversion spectrometer with 0.6% resolution. Energies, characteristics and coefficients of the transitions were determined (Table) for emission of γ -quanta (I) and internal conversion electrons (II). The results obtained are discussed on the basis of the vibration model (Phys. Rev. 103, 1035, 1956). It is assumed that the levels 1135, 1207 and 1283 kev form a two-phonon triplet; it is, however, not impossible that the 0⁺ level of 1135 kev is due to the excitation of a

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Radiative properties of the...

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neutron pair. The 1848-kev level, far away from the triplet, is a 0^+ level (Cohen, Price, Private Communication). The 552, 650 and 1207 kev levels have the reduced E2 transition probabilities of 36, 60 and 0.76 Weisskopf units which agrees with the collective nature of the 2^+-2^+ levels according to the vibration model. There is 1 table.

ASSOCIATION: Institut atomnoy energii im. I. V. Kurchatova AN SSSR
(Institute of Atomic Energy imeni I. V. Kurchatov AS USSR)

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| E, kev | $\epsilon_h \cdot 10^6$ I | $\epsilon_h/\epsilon_{L+M}$ II | |
|--------|------------------------------|-----------------------------------|---|
| 557 | 4,7 | 5 | |
| 650 | 3,1 | 5 | |
| 708 | 3,5 | — | |
| 726 | 2,3 | — | |
| 748 | 2,1 | — | |
| 808 | 2,8 | — | |
| 1135 | >20 | — | |
| 1305 | >1000 | 6,5 | |
| | | | E2 |
| | | | E2, $\frac{0^+}{0^+}$ M1, $\frac{2^+}{2^+}$ |
| | | | E2+M1 |
| | | | 0^+-0^+ |
| | | | 0^+-0^+ |

GROSHEV, L.V.; DEMIDOV, A.M.; IVANOV, V.A.; LUTSENKO, V.N.; PELEKHOV, V.I.

Spectra of gamma rays and internal conversion electrons emitted
in the capture of thermal neutrons by mercury nuclei. Izv.
AN SSSR. Ser. fiz. 27 no.11:1377-1391 N '63. (MIRA 16:11)

1. Institut atomnoy energii im. I.V. Kurchatova.

S/048/63/027/002/009/023
B104/B180

AUTHORS: Groshev, L. V., Demidov, A. M., Ivanov, V. A., Lutsenko,
V. N., and Pelekhov, V. I.

TITLE: The levels of the Sm¹⁵⁰ nucleus excited by the (n,γ) reaction

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya, v. 27,
no. 2, 1963, 216 - 227

TEXT: The γ-spectrum of Sm¹⁵⁰ was investigated with a magnetic Compton spectrometer with a resolution of 0.3% in the range 0.3 - 8 Mev. The spectrum of internal conversion electrons was investigated with a magnetic spectrometer with resolution 0.6%. From the results, represented in two large figures and one table, the level scheme of Sm¹⁵⁰ is constructed. The levels with 334, 740, 773, 1047, 1071, 1167, 1256 and 1278 kev are discussed in detail and the Sm¹⁵⁰ level is compared with that of Gd¹⁵² (Fig. 5). It is shown that corresponding levels of Sm¹⁵⁰ and Gd¹⁵² have similar radiation properties. Further the Gd¹⁵² transition between the

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The levels of the Sm¹⁵⁰ nucleus...

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2⁺ levels with 929 and 344 kev have an exaggerated conversion ($\alpha_K = 0.026$) which is more than for the M1 transition. It may be due to the contribution of an E0-transition. The analogous Sm¹⁵⁰ transitions between the 2⁺ levels with 1047 and 334 kev has a conversion factor of $\alpha_K = 0.0074$, which corresponds to a non-forbidden M1 transition. As type 2⁺ \rightarrow 2⁺ M1-transitions are forbidden in heavy even-even nuclei, it is assumed that E0 and E2 transitions make a small contribution. There are 5 figures and 5 tables.

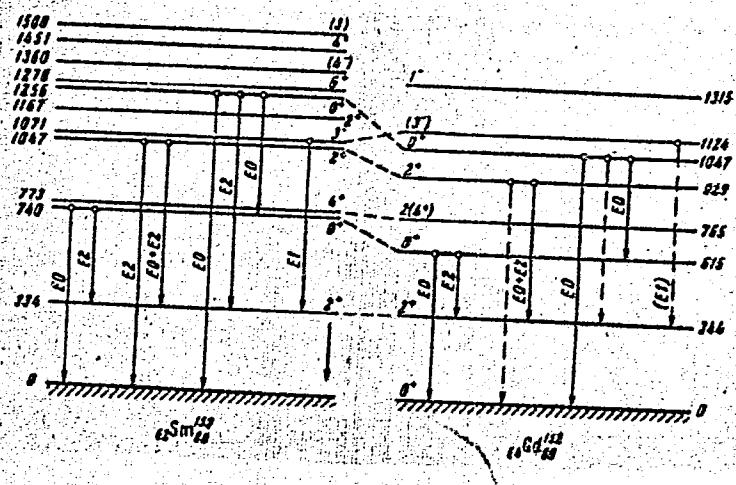
Fig. 5. Comparison of the Sm¹⁵⁰ and Gd¹⁵² level schemes.

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The levels of the Sm^{150} nucleus...

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Fig. 5



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DEMIDOV, V.; DEMIDOV, A. M.; KOTEN'YEV, V. V.; LUTSENKO, V. S.

"Gamma-Rays from the Reaction Sc⁴⁵(n, γ)Sc^{46".}

"The Spectrum of Gamma Rays from the Reaction Fe⁵⁶(n, γ)Fe^{57".}

reports submitted for All-Union Conf on Nuclear Spectroscopy, Tbilisi, 14-22 Feb 64.

IE (Inst Atomic Energy, AS USSR)

GROSHEV, L. V.; DEMIDOV, A. M.; IVANOV, V. A.; LUTSENKO, V. N.; PELEKHOV, V. I.

"Gamma Rays and Electrons of Internal Conversion from the Reaction Hf¹⁷⁷
(n, γ)Hf¹⁷⁸."

report submitted for All-Union Conf on Nuclear Spectroscopy, Tbilisi, 14-22
Feb 64.

IAE (Inst Atomic Energy)

GROSHEV, L. V.; DEMIDOV, A. I.; KOTEL'NIKOV, G. A.; LUTSENKO, V. N.; PELEKHOV, V. I.

"Levels of the Nucleus Rh¹⁰⁴ Excited by the Capture of Thermal Neutrons."

reports submitted for All-Union Conf on Nuclear Spectroscopy, Tbilisi, 14-22
Feb 64.

IAE(Inst Atomic Energy, AS USSR)

ACCESSION NR: AP4042970

S/0048/64/028/007/1234/1243

AUTHOR: Groshev,L.V.; Demidov,A.M.; Kotel'nikov,G.A.; Lutsenko, V.N.

TITLE: Spectrum of gamma-rays from neutron capture by iron 56 Report, 14th Annual Conference on Nuclear Spectroscopy held in Tibilisi 14-21 Feb 1964

SOURCE: AN SSSR. Izv. Seriy fizicheskaya, v.28, no.7, 1964, 1234-1243

TOPIC TAGS: neutron capture; gamma-ray spectrum; iron

ABSTRACT: The γ -ray spectrum excited in thermal neutron capture by natural iron was recorded with a magnetic Compton spectrograph that afforded a resolution of 0.3% above 2 MeV and 0.6% at 1 MeV, and is described elsewhere (L.V.Groshev, A.M. Demidov, V.N.Lutsenko and A.F.Malov, Izv.AN SSSR,Ser.fiz.24,791,1960). Sixty γ -rays were observed with energies from 1.264 to 10.038 MeV and intensities from 7×10^{-4} to 0.215 photons per capture. The assignment of these γ -rays to the various iron isotopes is discussed, and it is concluded that 44 of them arise from transitions in Fe⁵⁷ induced by neutron capture by Fe⁵⁶. The hardest γ -ray assigned to Fe⁵⁷ has an energy of 7.642 MeV. The spectrum was analyzed, and a level scheme is presented for Fe⁵⁷ which includes, in addition to the 7.643 MeV 1/2⁺ state into which the

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ACCESSION NR: AP4042970

neutron is captured, 21 states with energies not greater than 4.688 MeV. The states are compared with states known from (p,p') and (d,p) reactions, and spins and parities are assigned to 10 of them. From a consideration of intensity sums it is concluded that the scheme includes 87% of all the γ -ray transitions of Fe^{57} excited by neutron capture. The intensities of the γ -rays originating in the initial state are compared with the reduced neutron widths and spectroscopic factors obtained from the (d,p) reaction. The comparison is performed in the same way that similar comparisons have been previously performed for other nuclei (L.V.Groshev, A.M.Demidov, V.N.Lutsenko and V.I.Pelekhov, Doklady sovetskikh uchenykh na Vtoroy mezhdunarodnoy konferentsii po mirnomu ispol'zovaniyu atomnoy energii [Reports of Soviet scientists to the 2nd International Conf. on the Peaceful Use of Atomic Energy] Ya-dernaya fizika 1,281. Atomizdat, 1959). Although some correlation is found, it is not striking. It is suggested that the poor correlation may be due to a complex structure of the wave function of the initial state of Fe^{57} produced by neutron capture by Fe^{56} . The γ -decay of various of the states of Fe^{57} is discussed in some detail in relation to numerous calculations and experimental data in the literature. Orig.art.has: 4 figures and 3 tables.

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ACCESSION NR: AP4042971

S/0048/64/028/007/1244/1254

AUTHOR: Groshev,L.V.; Demidov,A.M.; Ivanov,V.A.; Lutsenko,V.N.; Pelekhov,V.I.

TITLE: Gamma-rays and internal conversion electrons from neutron capture of hafnium 177 /Report, 14th Annual Conference on Nuclear Spectroscopy held in Tibilisi 14-21 Feb 1964/

SOURCE: AN SSSR. Izv. Seriya fizicheskaya, v.28, no.7, 1964, 1244-1254

TOPIC TAGS: neutron capture, gamma-ray spectrum, electron spectrum, hafnium

ABSTRACT: The γ -ray spectrum excited by thermal neutron capture by natural hafnium was recorded with a magnetic Compton spectrometer with a resolution of 0.3% above 2 MeV and 0.6% at 1 MeV (see L.V.Groshev, A.M.Demidov, V.N.Lutsenko and A.F. Malov, Izv.AN SSSR,Ser.fiz.24,791,1960). The internal conversion spectrum of Hf¹⁷⁷ was observed for a target containing 89% Hf¹⁷⁷. The magnetic spectrometer employed had a resolution of 0.6% and is described elsewhere (V.I.Pelekhov and A.F.Malov, Izv.AN SSSR,Ser.fiz.25,1069,1961). A level scheme for Hf¹⁷⁸ is presented. Sixty-seven γ -ray lines were observed with energies from 1.066 to 7.526 MeV and intensities from 1.8×10^{-4} to 6.4×10^{-2} photons per capture. The assignment of these

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γ -rays to the various hafnium isotopes is discussed at length. Of the 18 lines recorded with energies less than 1.5 MeV, all but 3 were observed with enriched material by R.K.Smith (Phys.Rev.129,1691,1963) and are ascribed to Hf¹⁷⁸. The relative intensities of these lines were largely in agreement with those found by Smith; there were discrepancies, however, and in these cases the authors prefer their own data because of the higher resolution of their spectrometer. It is concluded after an involved discussion that of the remaining lines, those with energies greater than 6.1 MeV can be safely attributed to Hf¹⁷⁸ and those with lower energies cannot. Forty-two internal conversion lines were observed with energies from 82 to 1587 keV. Internal conversion coefficients were calculated for 23 of these lines, but multipolarities were assigned only to the 9 least energetic because of the absence of any suitable standard lines of high energy. The 260 keV K conversion line of the 325 keV γ -transition was assumed to be due to an E2-transition for calculating the internal conversion coefficients, and Smith's γ -ray intensities were employed. The level scheme given for Hf¹⁷⁸ comprises, in addition to the 7.619 MeV 3⁻, 4⁻ levels into which the neutron is captured, 15 states with excitations not greater than 1.513 MeV. The scheme is in general similar to that given by Smith (loc.cit.), but there are differences that are discussed in detail. Some spin and parity assignments are in doubt, and more experimental work is de-

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ACCESSION NR: AP4042971

sirable. Orig.art.has: 3 figures and 3 tables.

ASSOCIATION: none

SUBMITTED: OO

ENCL: OO

SUB CODE: NP

NR REF BOX: 004

OTHER: 006

3/3

ACCESSION NR: AP4042958

S/0048/64/028/007/1118/1123

AUTHOR: Groshev, L.V.; Demidov, A.M.; Kotel'nikov, G.A.; Lutsenko, V.N.; Pelekhov, V.I.

TITLE: The levels of rhodium 104 excited in thermal neutron capture *[Report, 14th Annual Conference on Nuclear Spectroscopy held in Tibilisi 14-21 Feb 1964]*

SOURCE: AN SSSR. Izv.Seriya fizicheskaya, v.28, no.7, 1964, 1118-1123

TOPIC TAGS: neutron capture, gamma ray spectrum, decay scheme, electron spectrum, rhodium

ABSTRACT: The γ -ray spectrum of Rh¹⁰⁴ excited by thermal neutron capture in Rh¹⁰³ was recorded with a magnetic Compton spectrometer with a resolution of 0.3%. The spectrometer and the experimental technique are described elsewhere (L.V.Groshev, A.M.Demidov, V.N.Lutsenko and A.F.Malov, Izv.AN SSSR,Ser.fiz.24,791,1960). Fifty-one lines were observed with energies from 4.885 to 6.998 MeV and intensities from 9×10^{-5} to 2.3×10^{-2} photons per capture. The internal conversion spectrum of Rh¹⁰⁴ was observed with a magnetic spectrometer having a resolution of 0.6%. Again the instrument and experimental techniques are described elsewhere (V.I.Pelekhov and

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A.F.Malov, Izv.AN SSSR,Ser.fiz.25,1069,1961). The β -spectrum was examined from 60 to 2500 keV, but the large continuous background prevented lines from being observed at energies greater than 200 keV. Below this energy ten internal conversion lines were distinguished. The most intense line (74 keV) was assumed to be the K conversion line of the M1 transition from the 97 keV isomeric state. (R.C.Greenwood, Phys. Rev.129,345,1963) and to have the theoretical value of the internal conversion coefficient. From this assumption, and from the relative intensities of the γ -rays obtained by private communication from O.Schult, the internal conversion coefficients of six other lines were calculated and their multipole order determined. Five lines were found to be due to E1 transitions and one to an M1. One of these assignments is in conflict with a previous assignment by A.S.Melioranskiy, L.F.Kalinkin and I.V.Estulin (Vozbuzhdenny*ye sostoyaniya Rh¹⁰⁴. Izd.Mosk.gos.un-ta 1963). If one assumes that the most energetic of the observed neutron capture γ -rays is due to direct transition to the ground state, one finds that the calculated neutron binding energy is in good agreement with the value obtained from the (d,p) reaction, and that of the 30 levels that lie within the region that has been explored by means of the (d,p) reaction, all but 5 coincide with previously known states. A striking feature of the γ -ray spectrum is that the high-energy lines resulting from transitions to levels lying below 0.8 MeV are generally considerably lower energy than the

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ACCESSION NR: AP4042958

less energetic lines. This can be explained by a hypothesis of N. Starfelt (Preprint, 1963) involving the M1 giant resonance. The present authors offer an alternative explanation based on the assumption that the neutron is captured in an s state. E1 transitions to the low-lying levels would then be multiparticle transitions, and thus weak, and M1 transitions would be forbidden by the orbital angular momentum selection rule for the neutron. A decision between the two explanations might be reached by determining the character of the transitions concerned, for these should be M1 transitions in the one case and E1 transitions in the other. Orig.art.has: 3 figures and 2 tables.

ASSOCIATION: none

SUBMITTED: OO

ENCL: OO

SUB CODE: NP

NR REF Sov: 008

OTHER: 010

3/3

GROSHEV, L.V.; DEMIDOV, A.M.; KOTEL'NIKOV, G.A.; LIUTSENKO, V.N.

Gamma-ray spectrum from the reaction $\text{Fe}^{56}(n, \gamma)\text{Fe}^{57}$.

Izv. AN SSSR. Ser. fiz. 28 no.7:1234-1243 Jl '64
(MIRA 17:8)

GROSHEV, L.V.; DEMIDOV, A.M.; IVANOV,V.A.; LUTSENKO, V.N.; PELEKHOV, V.I.

Gamma rays and internal conversion electrons from the reaction $Hf^{177}(n,\gamma)Hf^{178}$. Izv. AN SSSR. Ser. fiz. 28 no.7:
1244-1254 Jl '64 (MIRA 17:8)

LU'TSENKO, V.N., inzh.

Improved design of a D^{owthern} level indicator, Khim. i neft.
mashinostr. no.1:38 Ja '65.

(MIRA 18:3)

L 54785-65 EWT(m) Peb DIAAP

ACCESSION NR: AP5013994

UR/0048/65/029/005/0772/0781
17B

AUTHOR: Groshev, L.V.; Demidov, A.M.; Ivanov, V.A.; Lutsenko, V.N.; Pelakhov, V.I.; Shadiyev, N.

TITLE: Levels of erbium ¹⁶⁸ excited by neutron capture /Report, 15th Annual Conference on Nuclear Spectroscopy and the Structure of the Atomic Nucleus held in Minsk, 25 Jan-2 Feb 1965/

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v.29, no.5, 1965, 772-781

TOPIC TAGS: gamma ray spectrum, neutron capture, erbium, internal conversion

ABSTRACT: The gamma rays between 0.5 and 8 MeV from the $\text{Er}^{167}(n,\gamma)$ - Er^{168} reaction were investigated with a magnetic Compton spectrometer with a resolution of 0.2% for gamma ray energies above 2 MeV. The spectrometer has been described elsewhere (L.V.Groshev, A.M.Demidov, V.N.Lutsenko and A.F.Malov, Izv.AN SSSR,Ser.fiz.24,791,1960). The

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ACCESSION NR: AP5013994

sample was Er_2O_3 with the natural isotopic composition, to which Er^{167} contributes 90% of the slow neutron capture cross section. Possible origins of the gamma rays are discussed and it is concluded that those with energies above 5760 keV but not between 6185 and 6242 keV can be confidently assigned to Er^{168} . Nineteen such gamma rays are tabulated; there are also tabulated 13 gamma rays with energies between 5000 and 5760 keV of which the origin is in doubt and 23 with energies below 1400 keV which are ascribed to Er^{168} . The estimated errors of the energy measurements range from 2 to 8 keV. The measured relative intensities were converted to absolute intensities by applying a factor of 1.05 to the ratio of the measured intensity to the calculated intensity for each gamma ray.

errors of the energy measurements range from 3 to 8 keV. The measured relative intensities were converted to absolute intensities by normalizing the total radiated energy to the neutron binding energy. Conversion electron measurements are presented for 21 transitions with energies below 1400 keV. The conversion electron measurements for transitions with energies below 1000 keV were taken from earlier work (V.A.Ivanov and V.I.Pelekhov, Izv.AN SSSR,Ser.fiz.26,1480,1962) and those for higher energy transitions were measured with the same technique. Conversion coefficients were obtained for 19 of the transitions and multipolarities were assigned. A level and transition dia-

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ACCESSION NR: AP5013994

gram encompassing 19 levels below 1996 keV and 47 transitions was derived for Er¹⁶⁸. This diagram and the reasons for some of the spin and parity assignments are discussed in considerable detail. The energy of the level into which the neutron is captured was found to be 7766 ± 4 keV. Orig.art.has: 2 figures and 6 tables.

energy of the level into which the neutron is captured was found to be 7766 ± 4 keV. Orig.art.has: 2 figures and 6 tables.

ASSOCIATION: none

SUBMITTED: 00

ENCL: 00

SUB CODE: NP

NR REF Sov: 005

OTHER: 007

Card 3/3

LUTSENKO, V. V.
USSR/Chemistry

Card 1/1

Authors : Poray-Koshits, B. A.; Efros, L. S.; Vertkina, V. N.; and Lutsenko, V. V.

Title : Quinaldine derivatives obtained from aromatic amines and simple vinyl ethers

Periodical : Zhur. Ob. Khim. 24, Ed. 5, 895 - 898, May 1954

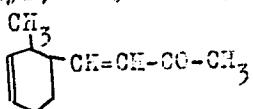
Abstract : Quinaldine is a valuable intermediate product used in the synthesis of stable acid and cyanine dyes. The reaction of primary aromatic amines with simple vinyl ethers appears to be the general method of obtaining quinaldine derivatives. The success of the reaction depends upon the nature of the substitute oriented in the nucleus. In case of a highly activated molecule of the reacting amine as well as in the case of deactivation, especially of the o-position relative to the amino group, no quinaldine derivatives can be obtained. Nine references; 4 German since 1883.

Institution: The Lensoviet Technological Institute, Leningrad, The A. E. Poray-Koshits Technological Laboratory of Organic Dyes

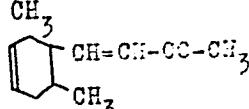
Submitted : December 24, 1953

S (3)

AUTHORS:

Nazarov, I. N. (Deceased), Zugatova, SCV/79-20-5-33/75
G. P., Lutsenko, V. V.TITLE: Reactions of Some Analogs of β -Ionone With Grignard Reagents
(Reaktsii nekotorykh analogov β -ionona s reagentami Grin'yara)PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 5,
pp 1568-1574 (USSR)ABSTRACT: The authors used organomagnesium compounds with the radicals
methyl, ethyl and phenyl and the ketones

(I)



(II)

Compound (I) was obtained by condensation of 2-methyl- Δ^3 -tetrahydro-benzaldehyde with acetone. The benzaldehyde derivative mentioned was obtained from acrolein and trans-piperylene by heating for two hours up to 180-190° in a metallic ampoule. The ketone (II) was prepared in a way previously described (Ref 1). Both ketones react with the organomagnesium

Card 1/3

Reactions of Some Analogs of β -Ionone With Grignard
Reagents

SCV/79-29-5-35/75

compounds mentioned and yield tertiary alcohols. Whereas β -ionone under the same conditions gives, in addition to the corresponding carbinols, also ketones owing to an abnormal 1,4-addition, these could not be obtained from the ionone analogs I and II. The yield in tertiary alcohols depends on the radical introduced and decreases in the order methyl - phenyl. The hydrogenation of the unsaturated carbinols yielded the corresponding saturated compounds. Further hydrogenation gives hydrocarbons. Both the unsaturated and the saturated alcohols have an agreeable odor which reminds of citral. The experimental part describes the syntheses carried out. Tables present: Table 1: physical data of the unsaturated carbinols, table 2: the same of saturated carbinols, table 3: the same of unsaturated hydrocarbons with conjugated double bonds, table 4: the same of unsaturated hydrocarbons with a double bond, table 5: the same of saturated hydrocarbons. There are 5 tables and 3 references, 2 of which are Soviet.

Card 2/3

Reactions of Some Analogs of β -Ionone With Grignard Reagents SOT/79-29-5-33/75

ASSOCIATION: Institut Khimii i khimicheskoy tekhnologii Akademii nauk Litovskoy SSR (Institute of Chemistry and Chemical Technology of the Lithuanian SSR)

SUBMITTED: March 28, 1956

Card 3/3

LUTSENKO, V. V., Cand Chem Sci -- (diss) "Allylic bromination of a series of Δ^3 -cyclohexene compounds." Vil'nyus, 1960. 14 pp with graphs; (Ministry of Higher and Secondary Specialist Education USSR, Vil'nyus State Univ im V. Kapsukas); 250 copies; price not given; (KL, 18-60, 147)

KUGATOVA, G.P. [Kugatova, G.]; LUTSENKO, V.V. [Lucenko, V.]

Allyl Bromination of some cyclohexenic systems. III. The effect of
N-bromosuccinimide on 4-(2'-methyl - 3- cyclohexenyl)-butan-3-one-2).
Liet ak darbai B no.l:165-180 '60. (EEAI 9:10)

1. Institut khimii i khimicheskoy tekhnologii AN Litovskoy SSR.
(Bromosuccinimide) (Cyclohexenyl group)
(Alloyl group) (Bromination)
(Methylecyclohexenylbutenone)

KUGATOVA, G.P.; LUTSENKO, V.V.

Allyl bromination of compounds of the cyclohexene series. Dokl. AN
SSSR 134 no.3:599-602 S '60. (MIRA 13:9)

1. Institut khimii i khimicheskoy tekhnologii Akademii nauk LitSSR.
Predstavлено акад. M.I. Katsachnikom.
(Cyclohexene) (Bromination)

SHALTYKO, L.G.; BARANOV, V.G.; VOLKOV, T.I.; LUTSENKO, V.V.;
FRENKEL', S.Ya.

Theory of heterophase polymerization. Part 2: Comparison
of molecular weight distributions of polymers obtained under
conditions of homophase and heterophase polymerization.
Vysokom. soed. 5 no.10:1527-1533 O '63. (MIRA 17:1)

1. Institut vysokomolekulyarnykh soyedineniy AN SSSR i
Vsesoyuznyy nauchno-issledovatel'skiy institut sinteticheskikh
volokon.

KUGATOVA-SHEMYAKINA, G.P.; LUTSENKO, V.V.

Allyl bromination of the methyl ester of 2-methyl- Δ -tetra-³
hydroxybenzoic acid. Zhur.ob.khim. 33 no.12:3883-3887 D '63.
(MIRA 17:3)

1. Institut khimii i khimicheskoy tekhnologii AN Litovskoy SSR.

KUGATOVA-SHEMYAKINA, G.P.; LUTSENKO, V.V.

Reactivity of allyl bromides of the Δ^3 -cyclohexene series.
Izv. AN SSSR. Ser. khim. no.8:1429-1436 Ag '64. (MIRA 17:9)
1. Institut organicheskoy khimii im. N.D. Zelinskogo AN SSSR i
Institut khimii i khimicheskoy tekhnologii AN Litovskoy SSR.

LINTSENKO, V.V.; KUGATOVA-SHEMYAKINA, G.P.

Exchange reactions involving 1,2-dimethyl-5-bromo- Δ_2 -cyclohexene.
Zhur. org. khim. 1 no.9:1598-1602 S '65. (MIRA 18:12)

1. Institut khimii i khimicheskoy tekhnologii AN Litovskoy SSR.
Submitted June 4, 1964.

L 08990-67

ACC NR: AP6012113

(A, N) SOURCE CODE: UR/0413/66/000/007/0027/0027

AUTHORS: Ivobotenko, B. A.; Gertsov, S. M.; Lovenetskiy, Yu. N.; Lutsenko, V. Ye.; Minkin, M. M.

17

ORG: none

TITLE: A multiphase step electric motor. Class 21, No. 180239

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 7, 1966, 27

TOPIC TAGS: electric motor, torque

ABSTRACT: This Author Certificate presents a multiphase step electric motor of the induction type with control windings and with permanent excitation magnets located in the stator. The electric motor has a toothed rotor without a winding (see Fig. 1). The design increases the torque in given size motors and simplifies their production. The stator is made with an internal permanent magnet in the form of two symmetrical halves magnetized with opposite polarity. The permanent magnet is enclosed between the halves of the stator.

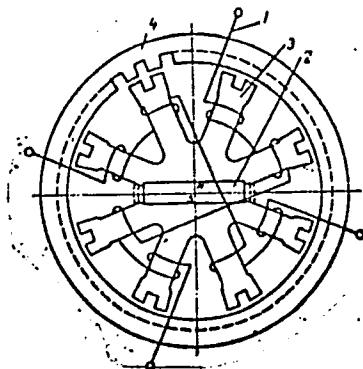
UDC: 621.313.13.025.4-133.3

Card 1/2

L 08990-67

ACC NR: AP6012113

Fig. 1. 1 - control windings; 2 - permanent magnet; 3 - stator; 4 - rotor



Orig. art. has: 1 figure.

SUB CODE: 09/ SUBM DATE: 21Jan65

Card 2/2 nst

L 10296-67 EWT(d)/EWT(l)/EWP(f)/EWP(c)/EWP(v)/EWP(k)/EWP(h)/EWP(l)
ACC NR: AP7003088 SOURCE CODE: UR/0292/66/000/010/0001/0004

AUTHOR: Belen'kiy, Yu. M. (Engineer); Gertsov, S. M. (Engineer); Lutsenko, V. Ye.
(Engineer); Minkin, M. M. (Engineer); Katkov, G. F. (Candidate of technical sciences)

ORG: none

TITLE: Serial production of step electric motors

SOURCE: Elektrotehnika, no. 10, 1966, 1-4

TOPIC TAGS: electric motor, electric industry

ABSTRACT: As a result of extensive theoretical and experimental work it was shown that most reliable step motors are of the split-phase magnetoelectric and four-phase inductor type.

The USSR industry at present manufactures 14 models of split-phase magnetoelectric step motors which designated by letters ShDA.^{3/} All these motors have 16 steps for each complete revolution and operate on a voltage of 14 or 28 volts; they weigh from 110 to 1,500 grams.

The four-phase inductor type step motors are manufactured in 15 models and are designated by letters ShDR. These motors have 24, 40, 56 or 120 steps for each complete revolution; they all operate on a voltage of 10 volts; their weight ranges from 100 to 700 grams. Orig. art. has: 4 figures and 2 tables. [JPRS]

SUB CODE: 09, 05 / SUBM DATE: none / ORIG REF: 004.

Card 1/1

UDC: 621.313.13-133.3.001.3

KHARCHENKO, I.F.; FAYNBERG, Ya.B.; NIKOLAYEV, R.M.; KORNILOV, Ye.A.;
LUTSENKO, Ye.A.; PRDENKO, N.S.

Investigating the interaction between an electron beam and
plasma. Zhur.eksp.i teor.fiz. 38 no.3:685-692 Mr '60.
(MIRA 13:7)

1. Fiziko-tehnicheskiy institut Akademii nauk Ukrainskoy
SSR.
(Electron beams) (Plasma (Ionized gases))

LUTSENKO, Ye.G.

A. C. electric locomotives in Japan. Elek. i tepl. tiaga no. 4:47-
48 Ap '57. (MLRA 10:6)
(Japan--Electric locomotives)

LUTSENKO, Ye.G., inzh.

Status of the locomotive stock in the U.S.A. during 1958. Vest.
TSNII MPS 18 no.3:61 My '59. (MIRA 12:3)
(United States--Locomotives)

LUTSENKO, Ye. G., inzh.

Modern designs of a.c. railroad motorcars in the United States.
Vest.TSNII MPS 19 no.6:63-64 '60. (MIRA 13:9)
(United States--Railroad motorcars)

L. S. V. E. I. N. K. O. V.
SINELNIKOV, K. D., ZEYDLIK, P. M., FAYNBERG, Ya. B., NERKASHEVICH, A. M., ZAVGORODNOV,
O. G., SAFRONOV, B. G., DUBOVAY, L. V., and LUTSENKO, E. E. I.

"Experimental Research of High Frequency Properties of Plasma and
Magnetohydrodynamic Shock Waves."

paper to be presented at 2nd UN Intl. Conf. on the peaceful uses of Atomic
Energy, Geneva, 1 - 13 Sep 58.

LITZKOWO, YE. I.

S.(o) FILE 1 BOOK REPORTS 807/2001

International Conference on the Potential Uses of Atomic Energy, 2d., Geneva, 1958
 Summary report of the Soviet delegation. Institute of Physical and Mathematical Sciences, Ed. of this
 Institute, S.I. Arshavskiy and R.Y. Zaritskiy, Candidates of Physical and Mathematical Sciences,
 8 pages (Report). Moscow, Atomizdat, 1959. 52 p. (Series: Basic Theory, Vol. 1.)

Ref.: (This page) A.Y. Alibayev, Andreevich; V.I. Vashchenko, Andreevich and
 F.L. Glazov, Candidate of Physical and Mathematical Sciences, Ed. of this
 Institute, S.I. Arshavskiy and R.Y. Zaritskiy, Candidates of Physical and Mathematical Sciences,
 8 pages (Report). Moscow, Atomizdat, 1959. 52 p. (Series: Basic Theory, Vol. 1.)

Persons: This collection of articles is intended for scientific research workers
 and other persons interested in nuclear physics. The volume contains 43 papers
 presented by Soviet scientists at the Second Conference on Potential Uses of
 Atomic Energy, held in Geneva in September 1958.

Contents: It is divided into two parts. Part I contains 17 papers dealing with
 plasma physics and generalized thermodynamic functions, and Part II contains 26
 on nuclear physics, including problems of particle acceleration and of
 nuclear fission. The first paper by I.M. Arshavskiy presents a review of
 work on uncontrolled thermonuclear reactions. The remaining papers in
 Part I deal with particular problems in this field.

Parties in Part II deal in detail with various problems in nuclear physics,
 such as the fission of heavy atoms and their isotopes and with the study of the
 interaction by means of artificial methods of particles and nuclei, described
 in a paper by G.I. Nevezin. The second part of the proceedings of
 the conference is published in 16 volumes. The first 6 volumes contain all the
 papers presented by Soviet scientists as follows: Volume (1), Thermonuclear energy and
 nuclear fission (Nuclear Physics); Volume (2), Radiation safety 1 (radiation energetics
 and nuclear fission and nuclear power); Volume (3), Radiation safety 2 (radiation
 energetics, radiation protection, and radiation health); Volume (4), Radiation
 energetics 2 (radiation protection, and radiation health); Volume (5), Radiobiology 1 (radiobiology
 and radiation protection); Volume (6) Radiobiology 2 (radiobiology and
 radiation protection). The other 10 volumes contain selected papers
 on the following topics: Nuclear fission and nuclear fusion (Volume 7); Nuclear
 fission and the use of isotopes (Volume 8); Nuclear fission and nuclear fusion
 (Volume 9); Nuclear fission and nuclear fusion (Volume 10); Nuclear fission
 and nuclear fusion (Volume 11); Nuclear fission and nuclear fusion (Volume 12); Nuclear
 fission and nuclear fusion (Volume 13); Nuclear fission and nuclear fusion (Volume 14); Nuclear
 fission and nuclear fusion (Volume 15); Nuclear fission and nuclear fusion (Volume 16).

CONTINUED

Report of Soviet Institutes: Nuclear (Cont.) 807/2001
 Ye. I. Litzkow, S.N. and V.I. Shatyrin: Spectroscopic Study of High Frequency
 Waves (Report 220) 92
 S. N. Litzkow, E.B. P. K. Sordilis, D. B. Pavlova, L. V. Dobrovor, I. M.
 G. G. Gerasimov, O. G. Gerasimov, V. G. Lebedeva, G. G. Mikhalev, and T. G.
 G. G. Mikhalev, "The Investigation of the Interaction of High Frequency
 Waves with Matter," Proc. Institute of Radioelectronics and Plasma Physics (Report 221) 110
 Ye. I. Litzkow, D. B. Pavlova, L. V. Dobrovor, I. A. Shchegoleva,
 and T. G. G. G. Mikhalev, "Plane Instability in a Dielectrical Resonator,"
 (Report 222) 120
 Ye. I. Litzkow, V. G. Dobrovor, "Plane Instability in Powerful Oscillations," (Report 223) 135
 Ye. I. Litzkow, D. B. Pavlova, L. V. Dobrovor, V. M. Gladyshev,
 G. G. Gerasimov, O. G. Gerasimov, V. G. Lebedeva, G. G. Mikhalev, and T. G.
 G. G. Mikhalev, "The Investigation of the Interaction of High Frequency
 Waves in a Magnetic Field" (Report 224) 145
 Ye. I. Litzkow, D. B. Pavlova, L. V. Dobrovor, and T. G. G. Mikhalev, "Dynamics
 of a Dielectrical Resonator in a Magnetic Field" (Report 225) 150
 Cont. 2/2

LUTSENKO, Ye. I.

9,3130(1163,1538,1141)
24.671^b

25021
S/057/61/031/007/001/021
B108/B209

AUTHORS: Kharchenko, I. F., Faynberg, Ya. B., Nikolayev, R. M., Kornilov, Ye. A., Lutsenko, Ye. I., and Pedenko, N. S.

TITLE: Interaction of an electron beam with a plasma in a magnetic field

PERIODICAL: Zhurnal tekhnicheskoy fiziki, v. 31, no. 7, 1961, 761-765

TEXT: The interaction between a beam of charged particles and a plasma has great physical and technical significance and is therefore subject to the present study. In a plasma in a magnetic field, an electron beam may interact with both E and H waves. Moreover, parameter resonance may occur since the arising waves lead to a change of the parameters which is periodical in space and time. When the frequency of the plasma particles stands in a certain ratio to the frequency of the electromagnetic field forming by self-modulation of the electron beam when moving through a plasma, parameter resonance is possible. This ratio between the frequency ω of the longitudinal waves, due to the interaction between beam and

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25021

Interaction of an electron beam ...

S/057/61/031/007/001/021
B108/B209

plasma, and the cyclotron frequency ω_H is given by $\omega = \frac{2\omega_H}{p}$ or by $\frac{2\pi}{L}V_o = \frac{2\omega_H}{p}$ where L is the periodicity of the wave in the beam, V_o the velocity of the beam ($p=1, 2, \dots$). However, also other instabilities may arise when an electron beam interacts with a plasma. The experimental arrangement for the present studies provided a 50-ma electron beam (5 kev) to interact with a plasma in a vacuum of $10^{-2} - 10^{-3}$ mm Hg. The magnetic field strength during the experiment was 2000 gauss. The results showed that at certain magnetic field strengths the electron beam becomes unstable, which leads to a widening of the glowing plasma (from 3 to 30 mm) and a decrease in the beam energy. When the electron beam was pre-modulated on a frequency f_m , instability occurred at four magnetic field strengths corresponding to the electron-cyclotron frequencies of $\frac{1}{2}f_m$, f_m , $\frac{3}{2}f_m$, and $2f_m$. The width of these unstable ranges was only a few per cent of the cyclotron frequency. The h. f. oscillations generated in the unstable zone

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25021

Interaction of an electron beam ...

S/057/61/031/007/001/021
B108/B209

in the beam (1800 to 3000 Mc/sec, half-width 30 - 50 Mc/sec) offer the possibility of obtaining millimeter waves by further increasing the magnetic field strength. Further results are announced to be given in a following paper. This paper was read at the Second Conference on Magnetohydrodynamics, Riga, July 1960. There are 3 figures, and 8 references: 6 Soviet-bloc and 2 non-Soviet-bloc.

ASSOCIATION: Fiziko-tehnicheskiy institut AN USSR Khar'kov (Institute of Physics and Technology AS UkrSSR Khar'kov)

SUBMITTED: October 3, 1960

X

Card 3/3

L 4242-66 EWT(1)/EWT(m)/ETC/EPF(n)-2/EWG(h)/EPA(w)-2/EWA(m)-2 IJP(c)
ACCESSION NR: AT5007973 GS/AT/JXT 8/0000/64/000/000/1029/103
AUTHOR: Berezin, A. K.; Berezina, G. P.; Bolotin, L. I.; Gorbatenko, M. F.;
Yezorov, A. M.; Zagorodnov, O. G.; Kornilov, B. A.; Kurliko, V. I.; Lutsenko, Ye.
I.; Laypkalo, Yu. M.; Pedenko, N. S.; Kharchenko, I. F.; Shapiro, V. D.;
Shevchenko, V. I.; Faynberg, Ya. B.

TITLE: Acceleration of charged particles with the aid of longitudinal waves in
plasma and plasma waveguides

SOURCE: International Conference on High Energy Accelerators. Dubna, 1963.
Trudy. Moscow, Atomizdat, 1964, 1023-1029

TOPIC TAGS: high energy accelerator, electron beam, plasma accelerator, plasma
waveguide

ABSTRACT: Plasma waveguides and noncompensated electron and ion beams can be utilized as accelerating systems in linear accelerators (Faynberg, Ya. B., Symposium CERN 1, 84 1956); Atomnaya energiya 6, 431 (1959)). In such systems, slow electromagnetic waves are propagated, which are necessary for particle acceleration. The waveguide properties of restrained plasma and noncompensated beams are displayed in the case of waves in the meter and centimeter range even for com-

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L 4242-66

ACCESSION NR: AT5007973

paratively small plasma densities around 10^9 to 10^{13} cm $^{-3}$). Under these conditions the high-frequency energy losses during wave propagation, which are due to the collisions of plasma particles, are small. The density of electrons in metals (about 10^{23}) is many orders greater than is necessary for ensuring waveguide properties in the microwave range. This leads to great losses of high-frequency power during wave propagation in metallic conductors. For plasma densities around 10^9 to 10^{13} cm $^{-3}$, the energy losses during particle transit through the plasma, which are proportional to plasma density, are insignificant, from 10^{-5} to 10^{-6} ev/cm. This means that plasma waveguides are "transparent" for accelerated particles. According to the conditions of acceleration the particles are divided into individual bunches. Thus the loss of particles moving in the plasma can increase greatly because of the occurrence of coherent deceleration representing the inverse of the effect of coherent acceleration, which was established by V. I. Veksler (Symposium CERN 1, 80 (1956)). However, even for accelerated particle fluxes of the order of tens of amperes, these losses are all insignificant. Because waveguide properties are determined by the plasma, the metal surfaces can be remote from regions with large field strengths or eliminated altogether, which permits a significant increase in the permissible voltages of the accelerating fields and a substantial de-

Card 2/5

L 4242-66

ACCESSION NR: AT5007973

crease in the high-frequency energy losses. It is also important to concentrate the electromagnetic energy in the radial direction only in the regions where the accelerated particles are moving. Thus for a given field strength the electromagnetic energy flux decreases markedly. If the fluxes of accelerated particles are large, the waveguide properties necessary for acceleration can be ensured by the particles of the beam which are not entrapped in the acceleration process, through which particles the entrapped particles move. The beam itself which is injected into the accelerator operates under these conditions of an accelerating system. To clarify the possibilities of particle acceleration by means of electromagnetic waves excited by charged particle beams, and also to investigate the influence of beam instabilities upon the acceleration process, the Physicotechnical Institute, Academy of Sciences Ukrainian SSR conducted theoretical and experimental investigations on the interaction of charged particle beams with a plasma. These investigations were intended to lead to, not the design and construction of a definite accelerator model, but the physical processes occurring during the interaction under consideration, and in this way to a determination of the possibilities of plasma methods of acceleration which are being developed at this institute. The theory developed up to the present time of the interaction between beams and plasma has been essentially a linear theory. As a result of the work of V. D. Shapiro and V.

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L 4242-66

ACCESSION NR: AT500773

I. Shevchenko at this institute for the case of beams of not very large density, a nonlinear theory has been created which permits one to trace the process of interaction of an initially nonmodulated beam and mono-energetic beam with a plasma from the initial stage to saturation. As is shown, a large part of the beam's energy of ordered motion (75% of its initial energy) is lost by the beam as a result of collective interactions with the plasma. Thus the energy expended upon excitation of oscillations amounts to 30%; upon increasing the thermal energy of the plasma, to 30%; and upon increasing the thermal energy of beam, to 15%. The experimental investigations of this interaction were carried out by I. F. Kharchenko and A. K. Berezin and their respective co-workers. Their results are in agreement with the theory of M. F. Gorbatenko. The mentioned institute has also carried out further theoretical and experimental investigations on the problems of electromagnetic wave propagation in plasma waveguides excited by high-frequency wall sources. The experimental studies, by O. G. Zagorodnov, et al., showed that the results agree well with theory under conditions of insignificant nonlinear effects. Current experiments are concerned with highly-ionized plasmas with density 10^{11} to 10^{12} . Orig. art. has: 4 figures, 1 table.

Card 4/5

L 4242-66

ACCESSION NR: AT5007878

ASSOCIATION: Fiziko-tehnicheskiy institut AN UkrSSR (Physicotechnical Institute,
AN UkrSSR) 44

SUBMITTED: 26May64

ENCL: 00

SUB CODE: NP

NO REF Sov: 005

OTHER: 001

BVA
Card 5/5

L 04748-67 EWT(1)
ACC NR: AT6020453

IJP(c) AT/GD
(N)

SOURCE CODE: UR/0000/65/000/000/0217/0228

AUTHOR: Lutsenko, Ye. I.; Boletin, L. I.; Faynberg, Ya. B.; Kharchenko, I. F.

53

ORG: none

B+1

TITLE: Investigation of a linear induction accelerator

SOURCE: AN UkrSSR. Vzaimodeystviye puchkov zaryazhennykh chastits s plazmoy (Interaction of charged particle beams with plasma). Kiev, Naukova dumka, 1965, 217-228

TOPIC TAGS: plasma accelerator, plasma pinch, electron polarization, plasma density

ABSTRACT: The aim of the experiments described in the present work was to investigate instability in electron beams generated in a plasma by the application of electric fields greater than those given by the criteria for the "run-away" condition. The accelerating system consists of 12 toroidal cores with one-turn coils. These coils serve as the primary circuit of the accelerating system and are energized by a capacitor discharge. The secondary circuit, formed by a plasma column 4 cm in diameter, was thus subjected to a spiral electric field. The plasma, initially generated by a 0.5 kw HF generator, reached a density of 10^{10} cm^{-3} . The polarization effects, generated current of accelerated particles and the spectrum of the induced oscillations were studied using Rogovskiy coils and microwave equipment. Typical currents of 30 amp with electron energy of 25-30 kev were generated. This is considerably below the available

Card 1/2

L 04748-67

ACC NR: AT6020453

stored energy and is explained by the observed oscillations radiated by the plasma and correlated with the current pulse. Electron beams moving in the opposite direction to the applied field were also observed. These were correlated with the radial pinching of the plasma. Orig. art. has: 7 figures.

SUB CODE: 20/ SUBM DATE: 11Nov65/ ORIG REF: 003/ OTH REF: 006

Card 2/2 gl

U S S R .

✓ 536. Micro-crystalloscopic determination of some rare elements. V. D. Vasilenko, B. E. Reznik and P. E. Lutsenko (Naučn. Zās. Dnepropeťelskogo Universiteta 43, 165-171; Referativ. Zb., Khim., 1034, Abstr. No. 16,804).—Quinoline can be used for the detection of In, Tl and Sr; 8-hydroxy-quinoline for In, Sb, Sn and Tl; and dibromo-8-hydroxy-quinoline for V, W, Mo, Ti, Tl, Sr, Sn and In. The last reagent can detect the elements in 4-component mixtures. The optical properties of the crystals formed, the sensitivity limits and the best conditions for carrying out the reactions are reported.
E. Hayes

LUTSENKO, Yu.

Progress in technical reequipment. Mias.ind.SSSR 25 no.1:30-31
'54. (MLRA 7:3)

1. Glavnnyy inzhener Irkutskogo myasokombinata.
(Irkutsk--Meat industry) (Meat industry--Irkutsk)

LUTSENKO, Yu.Ye.

Prevention of highway accidents. Vrach. delo no.4:123-125 Ap '61.
(MIRA 14:6)

1. Khirurgicheskoye otdeleniye Vtoroy Darnitskoy bol'nitsy
(nauchnyy rukovoditel' - kand.med.nauk P.Ye.Beylin) - nauchno-
eksperimental'noy bazy otdela organizatsii zdravookhraneniya
Ukrainskogo instituta kommunal'noy gigiyeny.
(KIEV--TRAFFIC ACCIDENTS)

LUTSENKO, Y.Ye.

Expansion in an orthogonal sum of operators having a discrete spectrum of the imaginary part. Trudy OGMI no.27:3-7 '61.

(MIRA 16:6)

(Operators (Mathematics))

BACHMANOVA, N.I.; DOBRYY, I.N. [Dohryi, I.N.]; LUTSET, P.G. [Lutset, P.H.]

Scientific Pharmaceutical Society of Odessa Province. Farmatsev.
zhur. 17 no.1:85-87 '62. (MIRA 15:6)

1. Odesskoye nauchnoye farmatsevticheskoye obshchestvo.
(ODESSA PROVINCE--PHARMACEUTICAL SOCIETIES)

DOMNICH, M.O. [Domnych, M.O.]; LUTSET, P.G. [Lutset, P.H.]

We are improving the qualifications of pharmacists. Farmatsev. zhur.
17 no.3:83-85 '62. (MIRA 17:10)

1. Kontrol'no-analiticheskaya laboratoriya aptechnogo upravleniya
Odesskogo oblastnogo otdela zdravookhraneniya.

SHELUD'KO, B.M.; BACHMANOVA, N.I.; DOMNICH, M.A.; LUTSET, P.G.

First and second attestations of pharmacists in Odessa
Province. Apt. delo 12 no. 5856-59 S-0163 (MIRA 16:11)

*

LUTSET, V. (Noril'sk); IVANOV, A., inzh.

The most northern in the whole world. Izobr. i rats. no.1:50
Ja '62. (MIRA 14:12)

(Norilsk - Mining engineering)

LUTSET, Z.; RASHCHUK, N.

Use of contact clarifying tanks in the Chelyabinsk water pipeline.
Zhil.-kom.khoz. 5 no.1:14-17 '55. (MIRA 8:5)

1. Glavnnyy inzhener Upravleniya vodoprovoda i kanalizatsii g.Che-
lyabinska (for Lutset). 2.Zaveduyushchiy laboratoriye Chelyabinskogo
vodoprovoda (for Rashchuk).
(Water--Purification)

LUTSET, Z.; RASHCHUK, N.

Using blast-furnace slag and granite scabbling in filter and
contact clarifiers. Zhil.-kom.khoz.5 no.5:19-21 '55.
(MLRA 8:11)

1. Glavnyy inzhener Upravleniya vodoprovoda i kanalizatsii g.
Chelyabinska (for Lutset) 2. Zaveduyushchaya laboratoriya
vodoprovoda (for Rashchuk)
(Water--Purification) (Filters and filtration)

BORUN, G.M.; LUTSET, Z.S.

Device for determining the path and depth of placement of pipelines.
Ved. i san.tekh.no.9:8-12 8 '56. (MIRA 9:10)
(Pipelines)

USSR / Forestry. Forest Management

K-4

Abs Jour: Ref Zhur-Biol., No 10, 1953, 43941

Author : Lutsevich, A. A.

Inst : Bryansk Forest Management Institute

Title : Forest Reconstruction in the Bryanskaya Oblast

Orig Pub: Tr. Bryanskogo lesokhoz. in-ta, 1957, 8, 239-245

Abstract: This study describes the methods of reconstructing forest plantings, principles of selecting tree species for forest cultures, and the nature of maintenance fellings in the reorganized plantings in relation to the groups and categories of the forests. The study also characterizes the importance of amelioration carried out on the forest areas having excessive moisture for the purpose of raising the productivity of the plantings.

Card 1/1

VASIL'YEV, P.V., prof., doktor ekon. nauk; PONOMAREV, A.D.; SOLDATOV, A.G., kand. sel'khoz. nauk; MOTOVILOV, G.P., doktor sel'khoz. nauk; NEVZOROV, N.V., kand. ekon. nauk; LOSITSKIY, K.B., kand. sel'khoz. nauk; RODIONOV, A.Ya., kand. sel'khoz. nauk; CHARKINA, A.P., kand. sel'khoz. nauk; LUTSEVICH, A.A., kand. sel'khoz. nauk; KOZHEVNIKOV, M.G., dots.; ALEKSEYEV, P.V., kand. sel'khoz. nauk; ZORIN, A.V., aspirant; BARANOV, N.I., kand. sel'khoz. nauk [deceased]; NAUMENKO, I.M., prof., doktor sel'khoz. nauk; IL'IN, A.I., kand. sel'khoz. nauk; MOISEYENKO, F.P., kand. biol. nauk; ZAKHAROV, V.K., prof., doktor sel'khoz. nauk; GECHIS, Yu.P., starshiy nauchnyy sotr.; BUTENAS, Yu.P., kand. sel'khoz. nauk; BUBLIS, K.A., aspirant; KAININ'SH, A.Ya., kand. sel'khoz. nauk; ZVIYEDRIS, A.I., kand. sel'khoz. nauk; SUKACHEV, V.N., akad. red.; ZHUKOV, A.B., prof., red.; PRAVDIN, L.F., prof., red.; MAKAROVA, L.V., red. izd-va; LOBANKOVA, R.Ye., tekhn. red.

[Problems of increasing forest productivity in four volumes] Problemy povysheniia produktivnosti lesov v chetyrekh tomakh. Moskva, Goslesbumizdat. Vol.4. [Economic problems of increasing forest productivity and accelerating ripening and cutting ages] Ekonomicheskie voprosy povysheniia produktivnosti lesov, vozrasty spelosti i vozrasty rubok. 1961. 253 p. (MIRA 15:1)

1. Akademiya nauk SSSR. Institut lesa. 2. Nachal'nik Glavnay inspeksii po lesnomu khozyaystvu i polezashchitnomu lesorazvedeniyu Ministerstva sel'skogo khozyaystva SSSR (for Ponomarev).

(Forests and forestry—Economic aspects)

STRUCHKOV, V.I., prof.; LUTSEVICH, E.V.

Surgical procedure in gastrointestinal hemorrhages of ulcerative
etiology. Khirurgiia no.10:11-15 '61. (MIRA 14:10)

1. Iz kafedry obshchey khirurgii (zav. - chlen-korrespondent
AMN SSSR prof. V.I. Struchkov) I Moskovskogo ordena Lenina
meditsinskogo instituta imeni I.M. Sechenova.
(PEPTIC ULCER) (HEMORRHAGE)

KACHKOV, A.P., kand.med.nauk; LUTSEVICH, E.V. (Moskva)

Shellac calculi in the stomach. Klin.med. 39 no.4:144-147 '61.
(MIRA 14:4)

1. Iz kafedry obshchey khirurgii (zav. - prof. V.I. Struchkov)
lechebного факультета I Moskovskogo ordena Lenina meditsinskogo
instituta imeni I.M. Sechenova na baze bol'nitsy №.23 (glavnnyy
vrach A.N. Lobanova).

(STOMACH--FOREIGN BODIES) (PAINT)

TUMANSKIY, V.K., doktor med.nauk; LUTSEVICH, E.V.

Analysis of the causes of non-ulcerative gastrointestinal hemorrhages
with fatal outcome. Sov.med. 25 no.5:45-49 My '62. (MIRA 15:8)

1. Iz kliniki obshchey khirurgii (zav. - chlen-korrespondent AMN
SSSR prof. V.I.Struchkov) I Moskovskogo ordena Lenina meditsinskogo
instituta imeni I.M.Sechenova.
(GASTROINTESTINAL HEMORRHAGE)

TUMANSKIY, V.K., doktor med. nauk; LUTSEVICH, E.V.

Unusual causes of gastrointestinal hemorrhages. Sovet. med.
27 no.9:105-109 S'63 (MIRA 17:2)

1. Iz kafedry obshchey khirurgii (zav. - chlen korrespondent
AMN SSSR prof. V.I.Struchkov) I Moskovskogo ordena Lenina me-
ditsinskogo instituta imeni I.M.Sechenova na baze bol'nitsy
imeni Medsantrud (glavnnyy vrach A.N.Lobanova).

STRUCHKOV, V.I., prof.; LUTSEVICH, E.V.; AL'TSHULER, Yu.B.; LENSKAYA, G.M.

Late results of the treatment of gastrointestinal hemorrhages
of ulcerous etiology. Khirurgiia 39 no.10:3-8 O '63.
(MIRA 17:9)

1. Iz kliniki obshchey khirurgii (zav.-chlen-korrespondent
AMN SSSR prof. V.I. Struchkov) I Moskovskogo ordena Lenina
meditsinskogo instituta imeni Sechenova na baze Moskovskoy
gorodskoy klinicheskoy bol'nitsy No.23 imeni Medsantrud
(glavnnyy vrach A.N. Lobanova).

VEL'TMAN, R.P.; ZHUKOVSKIY, L.I.; PONOMAREV, L.Ye.; VEMYAN, A.Zh.; BENENSON, M.P.; ZALMANENOK, V.S.; KRUPENKO, T.I.; BABICH, Z.Ye.; GUTMAN, L.B.; ALIMOV, T.U.; YAKUNIN, P.N.; KRYZHANOVSKAYA, N.L.; AKSEL'DORF, A.L.; MUSINA, S.A.; KLEYF, A.D.; LUTSEVICH, E.V.; LEVINSON, O.S.; TURBINA, N.S.

Brief reports. Sov. med. 28 no.10:144-148 O '65.

(MIRA 18:11)

1. Kiyevskiy institut tuberkuleza i grudnoy khirurgii (for Vel'tman, Zhukovskiy).
2. 3-ya kafedra khirurgii TSentral'nogo instituta usovershenstvovaniya vrachey, Moskva (for Ponomarev, Vemyan, Benenson).
3. Kafedra propedevticheskoy terapii Grodnenskogo meditsinskogo instituta i 1-ya klinicheskaya bol'nitsa imeni Solov'yeva, Grodno (for Zalmanenok, Krupenko).
4. Ukrainskiy nauchno-issledovatel'skiy institut okhrany materinstva i detstva imeni Buyko, Kiiev (for Babich, Gutman).
5. Klinika gospital'noy khirurgii Andizhanskogo meditsinskogo instituta (for Alimov).
6. Kafedra voyenno-nolevoy terapii Voyenno-meditsinskoy ordena Lenina akademii imeni Kirova, Leningrad (for Mitropol'skiy, Latysh, Murchakova).
7. Kafedra urologii I Moskovskogo ordena Lenina meditsinskogo instituta (for Aksel'dorf).
8. 4-ya infektsionnaya klinicheskaya bol'nitsa Ufy (for Musina).
9. Chernovitskaya detskaya oblastnaya klinicheskaya bol'nitsa (for Kleyf).
10. Klinika obshchey khirurgii lechebnogo fakul'teta I Moskovskogo meditsinskogo instituta imeni Sechenova i patologoanatomicheskoye otdeleniye klinicheskoy bol'nitsy No.23 imeni Medsantrud, Moskva (for Lutsevich, Levinson). (Cont. next card)

VEL'TMAN, R.P.; (Continued) Card 2:

11. Gematologicheskaya klinika TSentral'nogo ordena Lenina
instituta hematologii i perelivaniya krovi, Moskva (for Turbina).

LITSEVICH, F. F.

"The Epizootiology of Equine Strangles and Methods for Its Prophylaxis."
Cand Vet Sci, All-Union Inst of Experimental Veterinary Medicine, Min
Agriculture USSR, Moscow, 1955. (KL, No 9, Feb 55)

SO: Sum. No. 631, 26 Aug 55 - Survey of Scientific and Technical Dissertations
Defended at USSR Higher Educational Institutions (14)

LUTSEVICH, F. F. and SHUBIN, V. A.

Candidat^o Vet. Sci. -

"Some peculiarities of malignant foot-and-mouth disease!"

Veterinariya, Vol. 37, No. 6, 1960, p. 25

LUTSEVICH, F.F., kand. veter. nauk; SHUBIN, V.A., kand. veter. nauk

Some characteristics of malignant foot-and-mouth disease.
Veterinariia 37 no.6:25-29 Je '60. (MIRA 16:7)

(Foot-and-mouth disease)

ZAKSTEL'SKAYA, L.Ya.; SUKHAREVA, M.Ye.; TSI TYAN'-MAO [Ch'i T'ien-mao];
GERZINA, L.P.; LINTAYEVA, Ye.A.; LUTSEVICH, I.A.

Acute respiratory diseases in hospitals for children with
gastrointestinal disorders. Sov. med. 27 no.12:25-29 O '64.
(MIRA 18:11.)

1. Institut virusologii (dir.- deystviteľ'myy chlen AMN SSSR
prof. V.M. Zhdanov) i TSentral'nyy institut usovershenstvovaniya
vrachey (rekfor - M.D. Kovrigina).

LUTSEVICH, P.A.; MONGALEV, G.F.; MIKHALEVICH, N.G.; ZINOVICH, K.F.; SAFRONENKO, A.P.; KLIMENKOV, P.A.; GAYDUKEVICH, N.M.; SILIN, M.S.; BRAZOVSKIY, P.V.; KOVPAK, M.D.; MELESHKEVICH, O.A.; KAMENTSEVA, V.N.; KULIKOVSKIY, A.V.; TARAYKOVICH, P.I.; ALEYNIKOV, G.A.; SHMULEVICH, Sh.S.; GRACHEVA, K.I.; NIKOLAYEVA, Yu.N.; VOLOKHOV, M.A.; DOMASHEVICH, O., red.; KARKLINA, E., red.; ZUYKOVA, V., tekhn. red.

[Manual for livestock raisers] Spravochnik zhivotnovoda.
2., dop. i perer. izd. Minsk, Gos.izd-vo sel'khoz.lit-tv
BSSR, 1963. 462 p. (MIRA 16:8)

1. Glavnnyy zootehnik Upravleniya nauki Ministerstva sel'skogo
khozyaystva Belorusskoy SSR (for Safronenko).
(Stock and stockbreeding)

LUTSEVICH, V.I.; KOMPANIETS, F.P.

"Hydroplastic" devices. Avt. trakt.prom. no.6:24a-b Je '54.
(MLRA 7:7)

1. Khar'kovskiy traktorny zavod.
(Plastics) (Machine shop practice)

LUTSEVICH, V.I., inzhener.

Attachments used in machining parts. Mashinostroitel' no.11:39-43
N '57. (MIRA 10:10)
(Machine tools--Attachments)

LUTSEVICH, Vladimir Iosafovich, tekhnolog; CHMIL', L.N., red.;
SHEVCHENKO, M.G., tekhn. red.

[Electric spark machining of metals] Elektroiskrovaya ob-
rabotka metalla. Khar'kov, Khar'kovskoe knizhnoe izd-vo,
1963. 35 p. (MIRA 16:6)

1. Khar'kovskiy traktornyy zavod im. Ordzhonikidze (for
Lutsevich). (Electric metal cutting)

KOSTYUKEVICH, M.P. [Kastsiukovich, M.P.] (Minsk); LUTSEVICH, Ya.M. (Minsk);
VOINOVA, N. [Voinava, N.] (Mogilev)

What should be the relations of friendship. Rab.i sial. 35 no.1:16
(MIRA 12:3)
Ja '59. (Friendship)

LUTSEYKO, V.M.

Bardin, I.P., V.A. Reznichenko, G.D. Sidorenko, V.P. Revetsov, and V.M. Lutseyko (Institute of Metallurgy, Academy of Sciences USSR, and Institut metallurgii UFAN (Institute of Metallurgy, Urals Branch, Academy of Sciences USSR). Results of Consolidated Laboratory Investigations of the Application of Air Blast (in the Production) of Niobium Pig Iron, p. 35. Titan i yego splavy. vyp. II: Metallurgiya titana (Titanium and Its Alloys. No. 2: Metallurgy of Titanium) Moscow, Izd-vo AN SSSR, 1959. 179 p.

This collection of papers deals with sources of titanium; production of titanium dioxide, metallic titanium, and titanium sheet; slag composition; determination of titanium content in slags; and other related matters. The sources of titanium discussed are the complex sillimanite ores of the Kyakhtinskoye Deposit (Buryatskaya ASSR) and certain aluminum ores of Eastern Siberia. One paper explains the advantages of using ilmenite titanium slags for the production of titanium dioxide by the sulfuric acid method. Production of metallic titanium by thermal reduction processes (hydrogen, magnesium, and carbon reduction) is the subject of several papers, while other papers are concerned with the electrolytic production of titanium. Other subjects dealt with are interaction of titanium with water vapor and with hydrogen and the determination of titanium in slags.

EXCERPTA MEDICA Sec 16 Vol 7/6 Cancer June 59

2090. Effect of yeast extracts on irradiated organisms (Russian text)
LUTSHNIK N. V. Dept. of Biophys., Ural Branch of Acad. of Scis of the USSR,
Sverdlovsk *Bukhimiya* 1958, 23:1 (146-153) Graphs 8 Tables 5

Some yeast extracts are capable of reducing radiation damage if applied after irradiation. In experiments with mice, i.p. injection of 0.3 ml. of extract increases LD₅₀ to 100 r., lower and higher doses of extract are less effective. In experiments with pea seedlings yeast extracts markedly reduce growth inhibition caused by γ -irradiation, as well as the number of chromosomal aberrations in the root tips; the best results are given by the dilution 1 : 1000. For the effectiveness of extracts the environmental conditions are of primary importance. The best results are obtained with material extracted from damaged living yeast cells. Such conditions as low temperature, drying and irradiation were tested with success. In the same conditions yeast nucleic acid (RNA) gives protection comparable with that of the whole extract, while amino-acids and water-soluble vitamins are ineffective. Yeast extracts contain only traces of proteins and the elimination of proteins from extract does not change its effectiveness. The effectiveness of various samples of the extract is well correlated with the respective amounts of P. Some samples of RNA are ineffective, while RNA from effective extract gives a high degree of protection. It is probable that the highest effect is reached by injection of either specific or depolymerized RNA. An attempt is made to formulate a hypothesis explaining these results as well as those of other authors, obtained with the spleen and bone-marrow preparations.

LUTSIK, D.P., dotsent

Pelty's syndrome. Vrach.delo no.1:111-112 Ja '63.

(MIRA 16:2)

1. Kafedra fakul'tetskoy terapii lechebnogo fakul'teta (zav. -
prof. S.F. Gleynik) L'vovskogo meditsinskogo instituta.
(ARTHRITIS, RHEUMATOID)

LUTSIK, D.P., dotsent

Lesion of the heart in leukemia. Nauch.trudy L'vov.ohl.terap.
ob-va no.1:231-233 '61. (MIRA 16:5)

1. Kafedra fakul'tetskoy terapii lechebnogo fakul'teta L'vovskogo
meditsinskogo instituta (zav. kafedroy - prof. S.F. Oleynik).
(LEUKEMIA) (HEART—DISEASES)

LUTSIK, D.P., dotsent; GURAL', A.V.

Treatment in stenocardia with novocaine diathermic electrophoresis.
Nauch. trudy L'vov. obl. terap. ob-va no.1:293-298 '61.

(MIRA 16:5)

1. Kafedra fakul'tetskoy terapii lechebnogo fakul'teta L'vovskogo
meditsinskogo instituta (zav. kafedroy - prof. G.G. Karavanov).

(CORONARY HEART DISEASE) (NOVOCAINE)
(MEDIASTINUM)